(19) World Intellectual Property Organization

International Bureau



(43) International Publication Date 16 June 2005 (16.06.2005)

PCT

(10) International Publication Number WO 2005/054519 A1

(51) International Patent Classification7:

C21B 7/10

(21) International Application Number:

PCT/EP2004/053264

- (22) International Filing Date: 3 December 2004 (03.12.2004)
- (25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

ĺ.

WO 2005/054519 A1

03104532.1

3 December 2003 (03.12.2003)

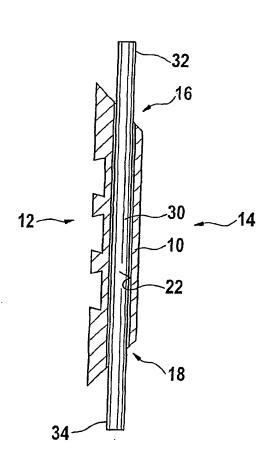
- (71) Applicant (for all designated States except US): PAUL WURTH S.A. [LU/LU]; 32, rue d'Alsace, L-1122 Luxembourg (LU).
- (72) Inventors; and
- (75) Inventors/Applicants (for US · only): SCHMELER.

Robert [LU/LU]; 15, rue Verte, L-3592 DUDELANGE (LU). MOUSEL, Nicolas [LU/LU]; 8, rue des Aubépines, L-3410 Dudelange (LU). THILLEN, Guy [LU/LU]; 136 route de Gilsdorf, L-9234 DIEKIRCH (LU).

- (74) Agents: SCHMITT, Armand et al.; Office Ernest T. Freylinger S.A., B.P. 48, L-8001 Strassen (LU).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH,

[Continued on next page]

(54) Title: METHOD OF MANUFACTURING A COOLING PLATE AND A COOLING PLATE MANUFACTURED WITH THIS METHOD



(57) Abstract: A method of manufacturing a cooling plate comprises following steps: pro- viding a metallic plate body (10) with a front face (12), a rear face (14) and at least one channel (22) extending through the metallic plate body beneath the front face; inserting with radial clearance a metallic tube (30) into the channel (22) so that both tube ends (32, 34) protrude out of the channel (22); and achieving a press fit of the tube (30) within the channel (22) by shrinking the section of the channel (22) by means of a metal-forming process applied to the plate body (10).

BEST AVAILABLE COPY



GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

.— with international search report

 before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

BEST AVAILABLE COPY